

Table 3.3.1. Concentrations of polycyclic aromatic hydrocarbons (PAHs) at study sites in the Long Creek and Red Brook watersheds during storm events. For each site, these samples were collected as composite samples comprised of three individual grab samples gathered during the first flush period of their respective storms.

An asterisk (*) indicates that a field duplicate was not analyzed by the lab for storm 3 even though it was collected in the field and the same container- and data sheet-labeling procedure was used. "J" = The first internal standard was high, therefore the naphthalene result is considered to be an estimated value. "nd" = not detected.

Note: the author is skeptical of the field blank values for acenaphthene and naphthalene because these compounds were not detected in the storm water samples.

Date: 10/23/00 - STORM 2

Date: 9/25/01 - STORM 3

EPA Priority ?	Priority Pollutant PAH Compounds	Reporting Limit	LC-S- 0.186	LC-N 0.585	LC-M 0.595	RB 1.694	Field Blank	DUP LC-N 0.585	Precision vs. DUP (RPD)	Site				DUP LC-M 0.595*
										DUP	LC-N	LC-S-	LC-N	
3	Acenaphthene	0.05	nd	0.10	nd	nd	nd	0.10	0	0.1	nd	nd	nd	0.19
2	Acenaphthylene	0.05	nd	nd	nd	nd	nd	nd	-	0.1	nd	nd	nd	nd
6	Anthracene	0.05	nd	0.20	nd	nd	nd	0.20	0	0.1	nd	nd	0.11	nd
9	Benzo (a) anthracene	0.05	nd	0.10	0.10	nd	nd	0.10	0	0.1	0.26	0.33	0.89	nd
13	Benzo (a) pyrene	0.05	nd	0.10	0.20	nd	nd	0.10	0	0.1	0.32	0.48	1.34	nd
11	Benzo (b) fluoranthene	0.05	nd	0.20	0.40	nd	nd	0.20	0	0.1	0.70	1.11	2.74	nd
16	Benzo (ghi) perylene	0.05	nd	0.10	0.20	nd	nd	0.10	0	0.2	0.31	0.50	1.42	nd
12	Benzo (k) fluoranthene	0.05	nd	0.10	nd	nd	nd	nd	-	0.1	0.18	0.29	0.85	nd
10	Chrysene	0.05	nd	0.20	0.40	nd	nd	0.20	0	0.1	0.54	0.80	1.91	nd
15	Dibenz (a,h) anthracene	0.05	nd	nd	nd	nd	nd	nd	-	0.2	nd	(0.11)	0.32	nd
7	Fluoranthene	0.05	nd	0.50	1.00	nd	nd	0.50	0	0.1	1.12	1.60	3.08	nd
4	Fluorene	0.05	nd	0.10	nd	nd	nd	0.10	0	0.1	nd	nd	nd	nd
14	Indeno (1,2,3-cd) pyrene	0.05	nd	0.10	0.20	nd	nd	0.10	0	0.2	0.32	0.56	1.57	nd
1	Naphthalene	0.05	nd	0.10	nd	nd	nd	0.10	0	0.1	nd	nd	nd	0.14 J
5	Phenanthrene	0.05	nd	0.30	0.30	nd	nd	0.20	40	0.1	0.49	0.67	1.11	nd
8	Pyrene	0.05	nd	0.30	0.60	nd	nd	0.30	0	0.1	0.85	1.15	2.36	nd

Table 3.3.2a. Oil and grease (hexane extractable) data for grab samples collected during the "rise to peak flow" of stormwater events in the Long Creek and Red Brook watersheds. An asterisk (*) indicates that the lab analysis report stated that one of the duplicate samples had a value that was under the PQL (practical quantitation level) [5.0 mg/L]. Therefore, the field duplicate precision (RPD) value for these samples was stated as a range of possible values. "RPD" = Relative percent difference.

STORM 1

Date: 3/28/2000

Time	Stream	Site	Site Code	Oil and Grease	NOTES
				(Hexane Extractable)	
				PQL = 5.0 mg/L	
				mg/L	
7:15	LC	Maine Mall	LC-S-0.186	< 5.0	
8:56	LC	Maine Mall	LC-S-0.186	< 5.0	
11:05	LC	Maine Mall	LC-S-0.186	< 5.0	
7:20	LC	DUP (Maine Mall)	LC-S-0.186-D	--	
9:00	LC	DUP (Maine Mall)	LC-S-0.186-D	< 5.0	
11:08	LC	DUP (Maine Mall)	LC-S-0.186-D	< 5.0	
8:06	LC	Mall Plaza	LC-M-0.595	< 5.0	
9:52	LC	Mall Plaza	LC-M-0.595	< 5.0	
11:50	LC	Mall Plaza	LC-M-0.595	< 5.0	
7:47	LC	Jetport	LC-N-0.585	< 5.0	
9:22	LC	Jetport	LC-N-0.585	< 5.0	
11:30	LC	Jetport	LC-N-0.585	< 5.0	
8:25	RB	Fairfield Inn	RB-1.694	< 5.0	
10:24	RB	Fairfield Inn	RB-1.694	< 5.0	
12:15	RB	Fairfield Inn	RB-1.694	< 5.0	

Report Limit:	5.0 mg/L
Stated QAPP Accuracy Limits:	<u>+14%</u>
<i>Accuracy Results</i>	-6%
Stated QAPP Field Duplicate Precision (RPD):	<u>+30%</u>
<i>Field Duplicate Precision [FDP]</i>	FDP 1 both values were below PQL
<i>(Relative Percent Difference) Results</i>	FDP 2 both values were below PQL
	FDP 3 both values were below PQL
Stated QAPP Lab Duplicate Precision (RPD):	<u>+15%</u>
<i>Lab Duplicate (RPD) Results:</i>	n/a (sample conc. < PQL)

Table 3.3.2a. cont'd.

STORM 2**Date: 10/18/2000**

Time	Stream	Site	Site Code	Oil and Grease (Hexane Extractable)	NOTES
				PQL = 5.0 mg/L	
				mg/L	
2:05	LC	Maine Mall	LC-S-0.186	5	The lab analyzed the temperature blanks when they received the samples. Temperatures for the five sample coolers ranged from 0.5 - 1.5°C. The recommended temperature for sample storage was 2.0 - 6.0 °C.
2:53	LC	Maine Mall	LC-S-0.186	7.5	
5:29	LC	Maine Mall	LC-S-0.186	< 5.0	
2:27	LC	Mall Plaza	LC-M-0.595	< 5.0	
3:07	LC	Mall Plaza	LC-M-0.595	< 5.0	
5:44	LC	Mall Plaza	LC-M-0.595	< 5.0	
2:06	LC	Jetport	LC-N-0.585	7.3	
2:54	LC	Jetport	LC-N-0.585	7.9	
5:30	LC	Jetport	LC-N-0.585	6.3	
2:06	LC	DUP-Jetport	LC-N-0.585-D	8.6	
2:54	LC	DUP-Jetport	LC-N-0.585-D	< 5.0	
5:30	LC	DUP-Jetport	LC-N-0.585-D	< 5.0	
2:23	RB	Fairfield Inn	RB-1.694	8.2	
3:13	RB	Fairfield Inn	RB-1.694	7.5	
5:44	RB	Fairfield Inn	RB-1.694	< 5.0	
--	O	Field Blank	Field Blank	< 5.0	
				Report Limit: 5.0 mg/L	
				Stated QAPP Accuracy Limits: <u>±14%</u>	
				Accuracy Results: -3 to -6%	
				Stated QAPP Field Duplicate Precision (RPD): <u>±30%</u>	
				Field Duplicate Precision [FDP] FDP 1: 16	
				(Relative Percent Difference) Results: FDP 2: (47-200 %)*	
				FDP 3: (25-200 %)*	
				Stated QAPP Lab Duplicate Precision (RPD): <u>±15%</u>	
				Lab Duplicate (RPD) Results: n/a (sample conc. < PQL)	

Table 3.3.2a. cont'd.

STORM 3

Date: 9/25/2001

Time	Stream	Site	Site Code	Oil and Grease	NOTES
				(Hexane Extractable)	
				PQL = 5.0 mg/L	
				mg/L	
6:40 AM	LC	Maine Mall	LC-S-0.186	<i>Not collected</i>	
3:55 PM	LC	Maine Mall	LC-S-0.186	<i>during this</i>	
5:14 PM	LC	Maine Mall	LC-S-0.186	<i>event.</i>	
7:17 AM	LC	Mall Plaza	LC-M-0.595		
4:25 PM	LC	Mall Plaza	LC-M-0.595		
5:55 PM	LC	Mall Plaza	LC-M-0.595		
7:17 AM	LC	DUP-Mall Plaza	LC-M-0.595-D		
4:25 PM	LC	DUP-Mall Plaza	LC-M-0.595-D		
5:55 PM	LC	DUP-Mall Plaza	LC-M-0.595-D		
6:59 AM	LC	Jetport	LC-N-0.585		
4:09 PM	LC	Jetport	LC-N-0.585		
5:30 PM	LC	Jetport	LC-N-0.585		
7:33 AM	RB	Fairfield Inn	RB-1.694		
4:51 PM	RB	Fairfield Inn	RB-1.694		
6:14 PM	RB	Fairfield Inn	RB-1.694		
--	O	Field Blank	Field Blank		

¹ Oil & grease samples not collected during this event because of budget.

Report Limit:	5.0 mg/L
Stated QAPP Accuracy Limits:	<u>±14%</u>
Accuracy Results	
Stated QAPP Field Duplicate Precision (RPD):	<u>±30%</u>
Field Duplicate Precision [FDP]	FDP 1
(Relative Percent Difference) Results	FDP 2
	FDP 3
Stated QAPP Lab Duplicate Precision (RPD):	<u>±15%</u>
Lab Duplicate (RPD) Results:	

Table 3.3.2b. Oil and grease (hexane extractable) data for grab samples collected during low flow conditions in the Long Creek and Red Brook watersheds. An asterisk (*) indicates that the lab analysis report stated that one of the duplicate samples had a value that was under the PQL (practical quantitation level) [5.0 mg/L]. Therefore, the field duplicate precision (RPD) value for these samples was stated as a range of possible values. "RPD" = Relative percent difference. Baseflow samples were collected between 9 am and 5 pm.

BASEFLOW 1

Date: 8/6/2000

	Stream	Site	Site Code	Oil and Grease (Hexane Extractable)	NOTES		
				PQL = 5.0 mg/L	Oil & Grease Reported by Microbac (mg/L) (Katahdin had to subcontract to Microbac because they lacked enough reagents.)		
				mg/L			
LC	Hoyts		LC-S-0.186	< 5.0	1.0		
LC	Mall Plaza		LC-M-0.595	< 5.0	< 1.0		
LC	Service Merch.		LC-M-0.910	< 5.0	< 1.0		
LC	Sable Oakes		LC-M-2.270~	< 5.0	< 1.0		
LC	Goodyear		LC-Mn-2.274~	< 5.0	3.0		
LC	DUP (Goodyear)		LC-Mn-2.274~D	< 5.0	< 1.0		
LC	Jetport		LC-N-0.585	< 5.0	< 1.0		
RB	HQ		RB-0.071	< 5.0	< 1.0		
RB	Fairfield Inn		RB-1.694	< 5.0	1.1		
RB	Above RWS		RB-3.961	< 5.0	2.3		
Report Limit:				5.0 mg/L	The lab analyzed the temperature blanks when they received the samples. Temperatures for the five sample coolers ranged from 13.8 - 15.7°C. The recommended temperature for sample storage was 2.0 - 6.0 °C. It was noted by the lab that the temp blank was not near the ice. Also, one of the two RB-3.961 sample bottles had not had H ₂ SO ₄ preservative added in advance of sampling so it had to be added after sampling.		
Stated QAPP Accuracy Limits:				+14%			
Accuracy Results				-3 to -8%			
Stated QAPP Field Duplicate Precision (RPD):				+30%			
<i>Field Duplicate Precision [FDP]</i>							
(Relative Percent Difference) Results		FDP 1		both values were below PQL			
Stated QAPP Lab Duplicate Precision (RPD):				+15%			
Lab Duplicate (RPD) Results:				n/a (sample conc. < PQL)			

Table 3.3.2b. cont'd.

BASEFLOW 2

Date: 8/23/00

Time	Stream	Site	Site Code	Oil and Grease (Hexane Extractable)	NOTES
				PQL = 5.0 mg/L	
				mg/L	
LC	Hoyts		LC-S-0.186	5.8	
LC	Mall Plaza		LC-M-0.595	< 5.0	
LC	Service Merch.		LC-M-0.910	< 5.0	
LC	Sable Oakes		LC-M-2.270~	< 5.0	
LC	Goodyear		LC-Mn-2.274~	< 5.0	
LC	Jetport		LC-N-0.585	< 5.0	
RB	HQ		RB-0.071	< 5.0	
RB	Fairfield Inn		RB-1.694	< 5.0	
RB	DUP - Fairfield		RB-1.694-D	< 5.0	
RB	Above RWS		RB-3.961	< 5.0	
BLANK BLANK				< 5.0	

Report Limit:	5.0 mg/L
Stated QAPP Accuracy Limits:	+14%
<i>Accuracy Results</i>	-10%
Stated QAPP Field Duplicate Precision (RPD):	+30%
<i>Field Duplicate Precision [FDP]</i>	
<i>(Relative Percent Difference) Results</i>	FDP 1 both values were below PQL
Stated QAPP Lab Duplicate Precision (RPD):	+15%
Lab Duplicate (RPD) Results:	n/a (sample conc. < PQL)

Table 3.3.2. cont'd.

BASEFLOW 3

Date: 9/19/00

	Stream	Site	Site Code	Oil and Grease (Hexane Extractable)	NOTES
				PQL = 5.0 mg/L	
				mg/L	
LC	Hoyts		LC-S-0.186	< 5.0	The lab analyzed the temperature blanks when they received the samples. Temperatures for the five sample coolers ranged from 1.0 - 1.2°C. The recommended temperature for sample storage was 2.0 - 6.0 °C.
LC	Mall Plaza		LC-M-0.595	< 5.0	
LC	DUP (Mall Plaza)		LC-M-0.595-D	< 5.0	
LC	Service Merch.		LC-M-0.910	< 5.0	
LC	Sable Oakes		LC-M-2.270~	< 5.0	
LC	Goodyear		LC-Mn-2.274~	< 5.0	
LC	Jetport		LC-N-0.585	< 5.0	
RB	HQ		RB-0.071	< 5.0	
RB	Fairfield Inn		RB-1.694	< 5.0	
RB	Above RWS		RB-3.961	< 5.0	
BLANK BLANK				< 5.0	

Report Limit: 5.0 mg/L

Stated QAPP Accuracy Limits: +14%

Accuracy Results -14%

Stated QAPP Field Duplicate Precision (RPD): +30%

Field Duplicate Precision [FDP]

(Relative Percent Difference) Results FDP 1 both values were below PQL

Stated QAPP Lab Duplicate Precision (RPD): +15%

Lab Duplicate (RPD) Results: n/a (sample conc. < PQL)

Table 3.3.3. E. coli bacteria measured in samples collected throughout the Long Creek and Red Brook watersheds during both low flow and storm flow conditions. "Potential Violation of Class C 'Instantaneous' Standards" reflects the fact that E. coli must be of human origin for these exceedances to be in effect. These tests did not distinguish between human- and non-human-origin *E. coli*.

Site Code	Time	Count (for 1 ml dilution)	Count (for 10 ml dilution)	#/100 ml (under 1 ml dilution)	#/100 ml (under 10 ml dilution)	Potential for Violation of Class C "Instantaneous" Standards*?		Relative Percent Difference (Field Duplicate) (1 ml)	Relative Percent Difference (Field Duplicate) (10 ml)
						1 mL dilution	10 mL dilution		

Date: 9/19/00; Collector: Jeff Varricchione; Weather: clear, dry, low flow

LC-S-0.186		14	43	1400	430	Y			
LC-S-0.470~		1	18	100	180				
LC-S-0.485~		7	17	700	170				
LC-M-0.595		4	18	400	180				
LC-M-0.910		10	29	1000	290	Y			
LC-M-2.270~		2	44	200	440				
LC-Mn-2.274~		1	5	100	50				
LC-N-0.585		9	95	900	950		Y		
RB-0.071		22	108	2200	1080	Y	Y		
RB-1.694		5	20	500	200				
RB-3.961		0	7	0	70				
Blank (lab)		0		0					

Date: 10/3/00; Collector: Jeff Varricchione; Weather: sunny, low flow

LC-S-0.186		3	17	300	170				
LC-S-0.470~		1	32	100	320				
LC-S-0.485~		3	19	300	190				
LC-M-0.595		3	54	300	540				
LC-M-0.595 DUP		5	42	500	420			50	25
LC-M-0.910		2	42	200	420				
LC-M-2.270~		0	11	0	110				
LC-Mn-2.274~		4	11	400	110				
LC-Mn-3.000~		0	1	0	10				
LC-N-0.585		2	92	200	920				
RB-0.071		1	8	100	80				
RB-1.694		0	2	0	20				
RB-3.961		0	7	0	70				
Blank (lab)		0		0					

Date: 10/18/00; Collector: Jeff Varricchione, Maine DEP; Weather: samples collected during Storm #2

LC-S-0.186	2:05 PM	4	400						
LC-S-0.186	2:53 PM	14	1400		Y				
LC-S-0.186	5:29 PM	9	900						
LC-M-0.595	2:27 PM	91	9100		Y				
LC-M-0.595	3:07 PM	61	6100		Y				
LC-M-0.595	5:44 PM	20	2000		Y				
LC-N-0.585	2:06 PM	5	500						
LC-N-0.585	2:54 PM	6	600						
LC-N-0.585	5:30 PM	11	1100		Y				
LC-N-0.585 DUP	2:06 PM	6	600					18	
LC-N-0.585 DUP	2:54 PM	8	800					29	
LC-N-0.585 DUP	5:30 PM	9	900					20	
RB-1.694	2:23 PM	0	0						
RB-1.694	3:13 PM	1	100						
RB-1.694	5:44 PM	4	400						
Blank (field)	--	0	0						